AECOM

Standard Operating Procedure
Lower Passaic River Restoration Project

Field Records

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Annual review of this SOP has been performed
and the SOP still reflects current practice.

Initials: _____ Date: _____
Initials: _____ Date: _____

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1.0 Scope and applicability

1.1 The purpose of this document is to define the standard operating procedure (SOP) for documentation of field activities associated with the Lower Passaic River Restoration Project (LPRRP), including sample collection events, field measurements, and site visits. Appropriate documentation of field activities provides an accurate and comprehensive record of the work performed, sufficient for a technical peer to reconstruct the day's activities and determine that necessary requirements were met. Field records also provide evidence and support technical interpretations and judgments. The procedures and systems defined in this SOP help ensure that the records are identifiable (reference the project task/activity), legible, retrievable, and protected from loss or damage.

1.2 LPRRP field data may be recorded electronically or in field logbooks, standardized forms, annotated maps, or photos. This SOP provides general guidance on field recordkeeping; additional details for specific procedures (for example, chain of custody, sediment sampling) are provided in the SOPs for the individual task.

1.3 It is fully expected that the procedures outlined in this SOP will be followed. Procedural modifications may be warranted depending upon field conditions or limitations imposed by the procedure. Substantive modification to this SOP will be approved in advance by the Project QA Manager and the RI Task Manager and communicated to the CPG Project Coordinator and the United States Environmental Protection Agency (USEPA) Remedial Project Manager. Deviations from this SOP will be documented in the field records. The ultimate procedure employed will be documented in the report summarizing the results of the sampling event or field activity.

2.0 Health and safety considerations

2.1 Although record keeping itself does not generally pose significant health and safety risks, the tasks being implemented in the vicinity of individuals keeping records may require attention to safety practices. Project related physical, chemical and biological hazards are addressed in the site specific Health and Safety Plan (HASP) and associated addendums (MPI, 2005a; MPI 2005b; ENSR, 2008).

2.2 Daily safety briefs are to be conducted at the start of each working day before any work commences. These daily briefs are to be facilitated by the Site Safety Officer (SSO) or his/her designee to discuss the day's events and any potential health risk areas covering every aspect of the work to be completed. Weather conditions are often part of these discussions. As detailed in the HASP, everyone on the field team has the authority to stop work if an unsafe condition is perceived until the conditions are fully remedied to the satisfaction of the SSO.

3.0 Interferences

Not Applicable

4.0 Equipment and materials

The following equipment list contains materials which may be needed in carrying out the procedures contained in this SOP. Not all equipment listed below may be necessary for a specific activity. Additional equipment may be required, pending field conditions.

- Bound field logbook
- Standardized field data sheets (refer to Section 5.3)
- Black, ballpoint pen or Sharpie® (or equivalent)
- Site maps
- Clipboard
- Three-ring binder or equivalent
- Camera (optional)
- Time piece
- Hand-held electronic recording device (optional) with Intellligent Data Entry Form (IDEF) software or equivalent

5.0 Procedures

5.1 General Requirements

5.1.1 The field records will contain sufficient detail so that the collection effort can be reconstructed without reliance on the collector's memory.

5.1.2 Pertinent field information will be recorded legibly in a logbook and/or an appropriate standardized form (as described herein) in black ballpoint pen.

5.1.3 Entries will be signed and dated. No erasures or obliterations will be made. A single line will be drawn through incorrect entries and the corrected entry written next to the original strikeout. Strikeouts are to be initialed and dated by the originator.

5.1.4 If a ballpoint pen cannot be used because of adverse weather conditions (rain or freezing temperatures), a fine-point Sharpie® is an acceptable substitute. If conditions are such that only pencil can be used, an explanation will be included in the logbook and the affected data will be photocopied, signed as verified copy, and maintained in the project files as documentation that the information has not been changed.

5.1.5 Entries will be factual and observational (i.e., no speculation or opinion), and will not contain any personal information or non-project-related entries. Abbreviations and acronyms will be defined.

5.1.6 Field information will be recorded without delay – information recorded significantly after the fact will be dated as such.

5.1.7 Field activities and other events pertinent to the field activities will be documented in chronological order. Times will be recorded using Eastern Standard Time (EST) or Eastern Daylight Savings Time (EDT) notation for each entry.

5.2 Field logbooks

5.2.1 Field logbooks will be bound water-proof field books. LPRRP logbooks will be dedicated to the project and will not be used for any other project or purpose. Separate and dedicated logbooks will be kept for different operations running concurrently (e.g., core collection on board the vessel, core processing at the CPG field facility); individual tasks making up each operation will be maintained in the same logbook, if possible.

5.2.2 The cover and binding of each logbook will be labeled to identify the operation and dates included with the logbook; each page in the logbook will be consecutively numbered. Pages will not be removed or torn out of the logbook.

5.2.3 The title page of each logbook will contain the following:

- AECOM contact, AECOM office location, and phone number;
- The logbook number (assigned at the time the logbook is signed out)
- Project name and number (LPRRP/Task Name, No. 12182-XXX-XXX); and
- Start and end dates of work covered by the logbook.

5.2.4 To assist in the return of a field logbook in the event it is lost, the following will also be included on the title page: "$25 Reward if found and returned to AECOM, 2 Technology Park Drive, Westford, Massachusetts 01886".

5.2.5 At the front of each logbook will be a page cross-referencing each author's printed name, signature, and initials.

5.2.6 A page header will appear on the first page of each day's notes in the logbook, and activities for each day will be recorded on a new page. The page header will include:

- name of author and other personnel on site (and affiliated organization if applicable);
- date;
- time of arrival (military time);
- proposed activity (task); and
- current weather and tidal conditions, and weather forecast for the day.

5.2.7 An abbreviated header, containing at least the date, will appear at the top of each additional page for the active date. Field forms require similar header information.

5.2.8 The field logbook will provide a chronology of events. At a minimum, documentation in a logbook will include the following (unless documented on a standard form):

- names of visitor(s), including time of arrival and departure, the visitor's affiliation, and reason for visit;
- summary of project-related communications, including names of people involved and time;

- time daily work commences and ceases;
- start and stop times of new tasks;
- start and stop times of significant stand by time (work interruptions);
- safety or other monitoring data, including units with each measurement;
- deviations from approved scope of work, including the necessary approvals;
- progress updates;
- problems/delays encountered;
- unusual events; and
- signature or initials of author on every page.

Additional detail on the contents of the field logbook is provided in Table 1.

5.2.9 The logbook will cross-reference the field forms if necessary; however, whenever possible, details recorded on the standardized forms will not be replicated in the logbook.

5.2.10 If there are additional lines on the page at the end of the day's activities, a line will be drawn through the empty space, and initialed and dated, leaving no room for additional entries.

5.3 Standardized forms

5.3.1 Standard forms for field data are provided with each SOP. The Daily Activity Log is attached to this SOP (Attachment 1). This form will be completed each day of active work and transmitted to the RI Task Manager or his/her designee. Refer to the appropriate SOP (e.g., core processing) for the associated forms.

5.3.2 The information collected on any field form may alternately be collected electronically by PC/handheld as appropriate.

5.3.3 The following rules apply to the standardized forms:

- Each form will be signed and dated by the person completing the form.
- There will be no blank spaces on the form – unused spaces will have "not applicable" or "not available" explanations.

5.4 Maps and drawings

5.4.1 Pre-existing maps and drawings that include notations made in the field (for example, relocating of sample locations) will be referenced in the logbook and, like all field records, include the project/task name and number, site identification, and be signed/dated by the person that prepared them.

5.4.2 Maps and drawings will include compass orientation and scale. Sketches will include points of reference and distances to the reference points.

5.5 Photographs and other photo documentation

Photographs or videos may be taken by the field team to help document site conditions, sample locations, or sample characteristics. Photographs and videos will be identified in the logbook or on the standard form by a unique numbering system. If photographs are collected by a digital camera, the file number as well as the photograph number will accompany the description of the photograph

in the logbook. At a minimum, the date/time the photograph was taken, the general location, a brief description, and the photographer's name will be recorded. Additional information may include Differential Global Positioning System (DGPS) coordinates, direction the photographer was facing, and/or weather conditions. If necessary, an object will be included to indicate the scale of the object in the photograph.

5.6 Electronic files

5.6.1 Electronically recording devices may include data logging systems, PDAs, laptops, or tablet PCs.

5.6.2 Sufficient backup systems will be in place to protect against electronic data loss. Information will be saved to a disk or backed up immediately upon completion. The backup disk or other media (CD, flash drive) will then be stored in a secure location separate from the laptop, tablet, or PDA.

5.6.3 Files will be uniquely identified and will be stored in the project files on the network in accordance with the Lower Passaic River Project Quality Management Plan (ENSR, 2007a). File names should include the date, a description of the file contents or a unique title, and a version number. For example, "YYYYMMDD_Name of documentV#". An unedited version of the file will be maintained and all subsequent manipulations tracked.

6.0 Quality assurance / quality control

6.1 Entries in the field forms will be double-checked by the samplers to verify the information is correct.

6.2 Completed field forms will be reviewed periodically by the Field Task Manager and/or Project QA Manager or their designees to verify that the requirements are being met. At a minimum, this should occur at the end of each day. When the review is complete, the reviewer will append his/her initials and date to the pages reviewed for documentation purposes.

6.3 If information recorded in the field is transcribed to another format, the original record will be retained for comparison purposes.

7.0 Data and records management

7.1 Deviations to the procedures detailed in the SOP or approved plans will be noted in the field logbook or other appropriate field form at the time of occurrence. These changes will be summarized on the Daily Activity Log. Significant deviations will be documented on a Nonconformance Form (Attachment 2) and maintained in the project file.

7.2 Proposed modifications to the SOPs or approved plans will be documented on a Field Modification form and submitted to USEPA. An example Field Modification form is presented as Attachment 3.

7.3 Logbooks, field forms, chain of custody forms, and all other records associated with the activities described in this SOP will be ultimately maintained in accordance with the Lower Passaic River Project Quality Management Plan (ENSR, 2007a).

7.4 Logbooks that are taken offsite from the field facility will be photocopied and filed at the end of each day to mitigate against the loss of historical entries should the logbook be lost in the field.

7.5 Field data forms and chain of custody will be filed in the field facility once they have been completed and distributed (if necessary), or at the end of each field day. These documents will be maintained in labeled three-ring binders or contained in some other organized manner that prevents loss.

7.6 Distribution of daily forms will be performed according to the needs of the project team and at the direction of the Field Task Manager or designee. Refer to the Lower Passaic River Data Management Plan (ENSR, 2007b) for the frequency and distribution of field data and chain-of-custody transmittal information.

8.0 Personnel qualifications and training

8.1 Individuals executing these procedures will have read and be familiar with the requirements of this SOP and the corresponding LPRRP plans (e.g., HASP, QAPP, DMP, FSP). No specialized training is required. Nonetheless, these activities should be reviewed by the Field Task Manager, as described below.

8.2 The Field Task Manager is responsible for reviewing and approving the field records for accuracy, completeness, and conformance to the procedures in this SOP. The Field Task Manager is also responsible for ensuring that the field records are distributed to the appropriate personnel during field activities, ensuring that records are maintained properly on site, and for archiving the records upon completion of field activities.

9.0 References

ENSR, 2007a. Quality Management Plan, Lower Passaic River Restoration Project, CERCLA Docket No. 02-2007-2009.

ENSR, 2007b. Lower Passaic River Data Management Plan. November 2007.

ENSR, 2008. Health and Safety Plan Addendum. USEPA Lower Passaic River Restoration Project Remedial Investigation/FeasibilityStudy. Spring 2008 Field Programs.

MPI 2005a. Lower Passaic River Restoration Project Health and Safety Plan. January 2005.

MPI 2005b. Lower Passaic River Restoration Project Health and Safety Plan Final Addendum – Sediment Coring. July 2005.

Tierra, 2007. Standard Operating Procedure No. 8 (Revision 2), Field Documentation. Newark Bay Study Area Phase II RIWP, Appendix F, October, 2007.

10.0 Revision history

Revision	Date	Changes
0	May 2008	NA
1	July 2008	Added cross-reference as Section 5.2.5; updated Table 1; added unique file ID scheme to Section 5.6.3
2	September 2009	Included Field Modification and Nonconformance forms; "ENSR" to "AECOM"; minor editorial changes
3	February 2010	Modify to include IDEF option; Table 1 footnote update; addition of Attachment 2-3 names on Contents page

Table 1 LPR Summary of Field Information

General Information	Applicable Record[1]
Project/task name/general location	All
Personnel on site (AECOM, clients, site contacts, regulators, oversight personnel, subcontractors, general public)	A, B, K
Results of phone calls, conversations (See QAPP Worksheet #3 for project contact information)	B
Chronology of activities, including mobilization, investigatory activities, and demobilization	B
Weather conditions (initial and any changes; temperature, barometric pressure, wind conditions, precipitation)	B, D
Tidal and atmospheric information (if applicable)	B, G
Subcontractors, description of services to be provided, and any issues (equipment problems, corrective action, stand by time)	A, B
Health and safety (H&S) tailgate meetings, H&S monitoring	Refer to HASP
Description of major equipment (survey vessels, sampling platforms, sampling devices) and any problems or conditions that might impact performance or data quality	A, B, J
Equipment decontamination	B, D, E
Any pertinent field observations such as difficulties in sampling or conducting measurements or unusual circumstances that could affect data quality (instrument problems, contamination sources)	B, D, J
Deviations from approved plan (schedule, relocation/elimination of locations, change orders), including rationale and approval	A, B, J
Sample collection and transfer summary, custody information from collection through analysis, to final disposal	C, D, E, H
Investigation-derived waste (IDW) types, volumes, storage, and disposal	F
Field measurements	
Description of Instruments (make, model, serial number) and inspection	B, G
Instrument calibration (date, time, personnel, standard, standards used/expiration date, and results)	B, G
Measurement date, time, location/station, results (units, any correction factors applied, calculations (if applicable)	D, E, G, L
Identity of person performing the measurements	D, E, G, L
Sampling information	
Equipment description and inspection	B, D
Sample selection criteria/rationale (if different from plan)	A, B, D, J
Sample location (GPS coordinates, depth, compass/distance from fixed points)	D
Sample description (recovery, moisture, color, odor, texture, general sediment profile/stratigraphy, PID screening results, artifacts)	D, I
Sample manipulations (homogenization, compositing, preservation)	D, E
Sample ID, segment/interval, date, time, and sampler identity	D, E, H
Sample parameters, containers (size/type), preservation	
Field and QC sample ID, storage container and conditions for each (sub)sample/parameter set	D, C, E

[1] Locations for this information may include but are not limited to: A: Daily Activity Log; B: Field Notebook; C: COC Form; D: Sample Collection Form; E: Sample Processing Form; F: IDW Logs; G: Water Quality Data Log; H: Sample Transfer and Custody Form; I: Core Logging Form; J: Nonconformance Form; K: Site Log-in Record; L: In-Situ Data Log

Quality Assurance Project Plan

RI Water Column Monitoring Program / Physical Data Collection
Lower Passaic River Restoration Project
New Jersey

Attachment 1 Example of Daily Activity Log

Daily Activity Log **Lower Passaic River Restoration Project** **Project No.: 12182-004** **Task: _____** **Date: _____**
Vessel/Sampling Platform:
Personnel (Name/Affiliation/Role):
Sampling Performed/Equipment Used:
Stations Sampled:
Health and Safety Issues:
Deviations from Approved Plan:
Dock Departure Time:
Dock Return Time:
Recorded by:

Attachment 2 Example of Field Modification Form

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Field Modification Form
Lower Passaic River Restoration Project
Remedial Investigation
Project No: 12182-004

Field Modification Number:	
Document (plan or SOP title and date)	
Activity:	
Proposed Modification:	
Effective Date:	
Rationale:	
Submitted by	**Date:**
FTM Approval:	**Date:**
Project QA Manager Approval:	**Date:**
Task Manager Approval:	**Date**

Revision 1, September 2009

Attachment 3 Example of Nonconformance Form

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Nonconformance Report
Lower Passaic River Restoration Project
Remedial Investigation
Project No: 12182-004

Nonconformance Number:	
Document (plan or SOP title and date)	
Activity:	
Nonconformance:	
Date of Nonconformance:	
Ramifications/Corrective Action:	
Submitted by	**Date:**
Project QA Manager Review:	**Date:**
Task Manager Review:	**Date:**
Other Approval:	**Date**

Revision 1, September 2009

Engineering and Design – Hydrographic Surveying EM 1110-2-1003

The standardized procedures detailed in this U.S. Army Corps of Engineers manual have been adopted for the bathymetry surveying on the LPR. This manual is available online at the website below and includes the contents listed below.

http://www.usace.army.mil/publications/eng-manuals/em1110-2-1003/toc.htm

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Transmittal Letter
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Entire and Basic documents - Because of their size, these files have not been included here.